

REMARKS/ARGUMENTS

This application has been carefully considered in light of the non-final office action of December 22, 2008. As a result, the specification and claims have been amended in order to clearly define the invention over the cited prior art and to place the application and claims in better format for US practice. No new matter is being added.

Claims 1, 2, 6-11 and 13 have been rejected under 35 U.S.C. 102(b) as being directly anticipated by the teachings of US Patent 6,208,104 to Onoue. Claim 3 has been rejected as being obvious over Onoue under 35 U.S.C. 103(a). Claim 4 has been rejected as being obvious under 35 U.S.C. 103(a) over a combination of Onoue and the teachings of US Patent 4,794,513 to Muller.

Claim 5 has been rejected under 35 U.S.C. 103(a) as being obvious in view of the teachings of Onoue. Claim 12 has been rejected as being obvious under 35 U.S.C. 102(a) when considered in view of US Patent 4,611,296 to Niedermayr.

For the reasons set forth below, reconsideration of the art rejections is respectfully solicited and favorable consideration and allowance of the claims is solicited.

There is no teaching in any of the cited references, and in particular the primary reference to Onoue, that would suggest to one of ordinary skill in the art to design a robot having the elements of amended claim 1 so as to implement a single function bus working at a given frequency for both transmitting orders or control signals to the power modules and for receiving information from position sensors. Such a single function bus

with digital interface minimizes the number of electrical cables particularly in the arm of the robot. Thus, there is more free space within the arm and less constraint on movable elements within the arm as well as better access into the arm. In view of the foregoing, the robots of the present invention are more economical to design and build and can operate faster and more accurately than prior art robots.

By implementing the digital interface of the present invention and the single functional bus, information from the position sensor is directly available to the control unit which enables the control unit to more efficiently control movements of the robotic arm.

It should be noted that the servo unit 500 of Onoue corresponds to the power module of the present invention. See column 6, lines 35-39, of the reference where it is noted that each joint of the robot is connected to a servo unit. According to Onoue, a servo communication interface 104/503, see column 7, beginning at line 37, linking the servo units 500 to the control unit, however, such servo communication interface does not link the control unit to a digital interface which serializes its output and being connected to positions sensors, as is the case with the currently claimed invention. Therefor, Onoue does not provide any similar digital interface.

Further, with the robot according to Onoue, the line 601 can not be a bus, as suggested, as it is connecting the power unit 508 to the motor 617 which means it is an electrical power supply line, whereas information from the encoder 618 to the CPU 504 implies information signals being provided through a signal supply line. The power supply line and the information supply line not being compatible as a bus.

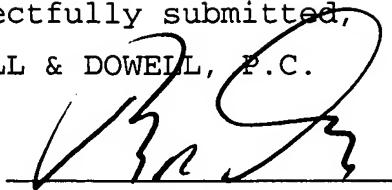
In addition to the foregoing, in Onoue, information from the encoder is available for the drivers 507 and CPU 504 but not available outside the servo unit to the control unit.

In view of the foregoing, it is respectfully submitted that Onoue does not disclose every element of claim 1, as amended, and therefore, withdrawal of the rejection of the claims under 35 U.S.C. 102(b) is believed proper. In a like manner, the rejections for obviousness over Onoue and combinations of Onoue and Muller and Onoue and Niegermayr should also be withdrawn as the secondary references do not teach the differences between the presently claimed invention and the reference to Onoue.

Should the Examiner have any questions regarding the amendments submitted herewith or the allowability of the claims over the prior art, the Examiner is invited to contact the undersigned attorney at the telephone number shown below.

As this response is being filed after the shortened statutory period, a separate request for extension of time is being submitted concurrently. Please charge any deficiencies in the extension fees to Deposit Account 04-1577.

Respectfully submitted,
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By : 

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